VOROZHTSOV, N.N., mladshiy

Aromatic fluoro derivatives. Part 3: Reactions of chloronitro compounds with alkali metal fluorides. Zhur. ob. khim. 31 no. 11:3705-3708 N '61. (MIRA 14:11)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.
(Nitro compounds) (Alakali metal chlorides)

KOPTYUG, V.A.; ISAYEV, I.S.; VOROZHTSOV, N.N.

Method of cleaving toluene-C14 with the purpose of determining the position of the label in the nucleus. Dokl. AN SSSR 137 no.4:866-868 Ap '61. (MIRA 14:3)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR i Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva. 2. Chlen-korrespondent AN SSSR (for Vorozhtsov).
(Toluene) (Carbon---Isotopes)

KNUNYANTS, I.L., akademik; VOROZHTSOV, N.N.

International Symposium in fluorine chemistry in Birmingham.
Zhur. VKHO 5 no.1:85-92 '60. (MIRA 14:4)

1. Chlen-korrespondent AN SSSR (for Vorozhtsov).
(Fluorine—Congresses)

YAKOBSON, G.G.; VOROZHTSOV, N.N., ml.

Preparation of 2, 4-dinitrophenyl derivatives of tertiary alcohols.
Zhur.VKHO 6 no.3:360 '61. (MIRA 14:6)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.
(Alcohols)

VOROZHTSOV, B.I.; OL'SHANSKAYA, N.I.; VOROZHTSOVA, I.G.

Dielectric properties of insulation materials in gamma-irradiation. Part 5: Polyethylene terephthalate. Izv.vys.ucheb.zav.;fiz. no.2:75-77 '63. (MIRA 16:5)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.
(Terephthalic acid—Electric properties)

POTAKHOVA, G.I.; VOROZHTSOV, B.I.; FILATOV, I.S.

Dielectric properties of insulating materials due to gamma radiation. Part 4: The epoxy compound ED-6. Izv. vys. ucheb. zav; fiz. no.1:155-159 '63. (MIRA 16:5)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.
(Dielectrics, Effect of radiation on) (Resinous products)

VOROZHTSOV, B. I.; POTAKHOVA, G. I.; NESTEROV, V. M.

Dielectric properties of insulating materials under gamma-radiation. Part 3: AG-4 plastic material. Izv. vys. ucheb. zav.; fiz. no.6:143-146 '62. (MIRA 16:1)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.

(Plastics)
(Dielectrics, Effect of radiation on)

VOROZHTSOV, B.I.; NESTEROV, V.M.; OL'SHANSKAYA, N.I.

Dielectric properties of insulating materials subjected to gamma radiation. Part 2. Polyethylene. Izv. vys. ucheb. zav.; fiz. no.5:34-37 '62. (MIRA 15:12)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V. Kuybysheva.
(Dielectrics, Effect of radiation on)
(Polyethylene)

OL'SHANSKAYA, N.I.; VOROZHTSOV, B.I.

Variation of the dielectric loss in crystallizing polymers under the action of ionizing radiation. Izv. vys. ucheb. zav.; fiz. no.5:150-155 '62. (MIRA 15:12)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.
(Dielectric loss)
(Polymers and polymerization, Effect of radiation on)
(Ionization)

S/139/63/000/001/024/027
E202/E420

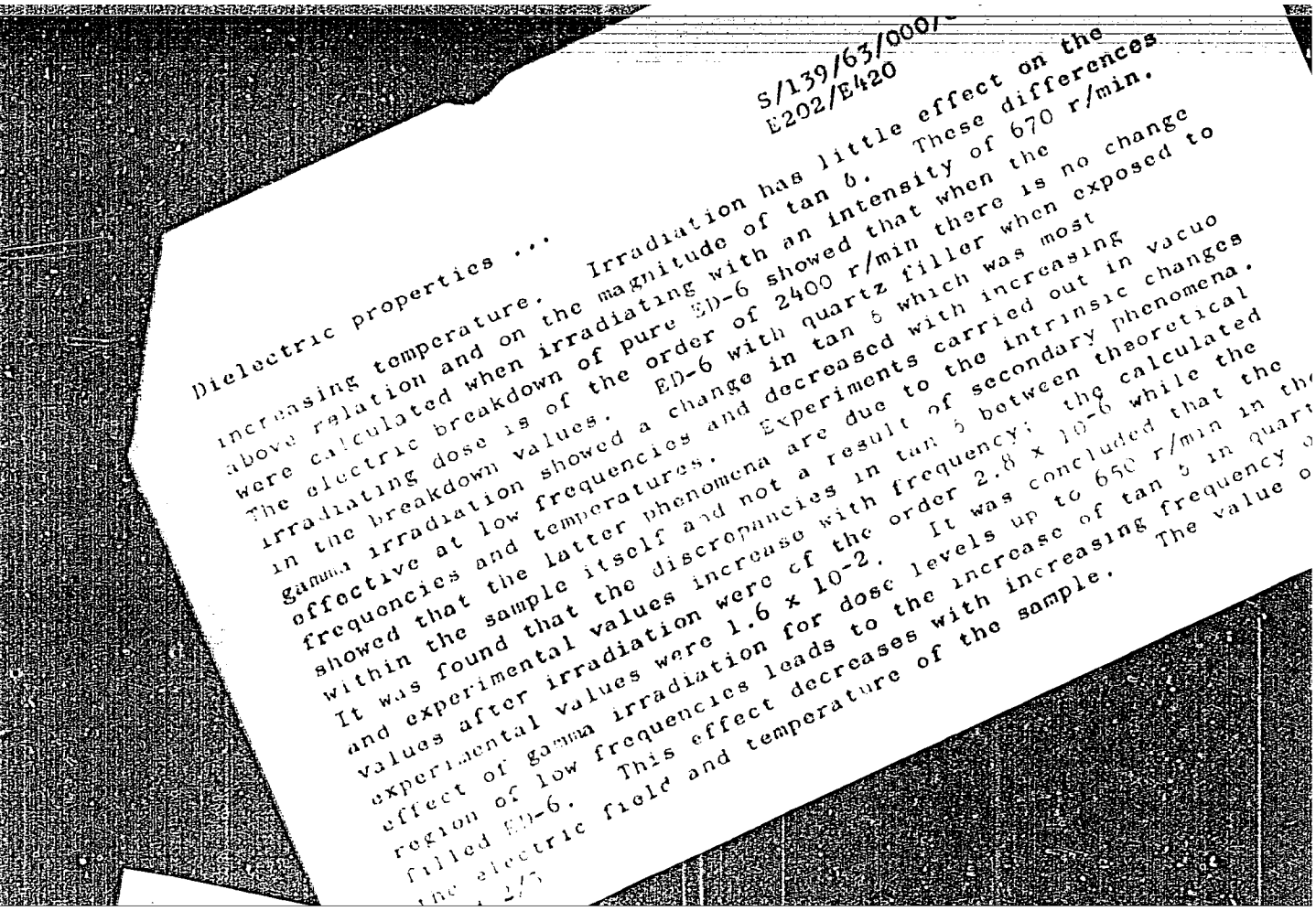
AUTHORS: Potakhova, G.I., Vorozhtsov, B.I., Filatov, I.S.

TITLE: Dielectric properties of insulating materials during gamma-irradiation. IV. Epoxy compound ЭД-6 (ED-6)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika, no.1, 1963. 155-159

TEXT: The results of studying the dielectric losses and permittivity of ED-6 compound during gamma irradiation are given. Both the effect of the intensity of the dose and cumulative dose of radiation was considered in terms of the dielectric characteristics of the compound in relation to the frequency of the external field. The investigations were carried out at various temperatures, in atmospheric conditions, in vacuo and under tropical humidity. Of particular interest was the study of the effect of quartz filler on the dielectric properties of the above compound under the conditions of irradiation. Similar methods to those described previously (Izv. vuzov SSSR, Fizika, no.6, 1962, 143) were used. In spite of the presence of the polar epoxy groups the dependence of tan δ for pure ED-6 on the frequency is very weak and disappears with

Card 1/3



S/139/63/000/
E202/E420

Dielectric properties ...

increasing temperature. Irradiation has little effect on the above relation and on the magnitude of tan δ. These differences were calculated when irradiating with an intensity of 670 r/min. The electric breakdown of pure ED-6 showed that when the irradiating dose is of the order of 2400 r/min there is no change in the breakdown values. ED-6 with quartz filler when exposed to gamma irradiation showed a change in tan δ which was most effective at low frequencies and decreased with increasing frequencies and temperatures. Experiments carried out in vacuo showed that the latter phenomena are due to the intrinsic changes within the sample itself and not a result of secondary phenomena. It was found that the discrepancies in tan δ between theoretical and experimental values increase with frequency; the calculated values after irradiation were of the order 2.8×10^{-6} while the experimental values were 1.6×10^{-2}. It was concluded that the effect of gamma irradiation for dose levels up to 650 r/min in the region of low frequencies leads to the increase of tan δ in quartz filled ED-6. This effect decreases with increasing frequency of the electric field and temperature of the sample. The value o

Dielectric properties ... S/139/63/000/001/024/027
E202/E420

tan δ in the quartz filled compound at a fixed frequency was determined by the intensity of the irradiating dose. It was also found that the specific volume resistivity of ED-6 decreases with the gamma irradiation. Finally, it was shown that in materials with a quartz filler the increase of tan δ during irradiation is due to the quartz. There are 5 figures and 2 tables.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physico-technical Institute at Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: November 30, 1961

Card 3/3

VOROZHTSOV, B.I.; NESTEROV, V.M.; ZAMOTRINSKAYA, Ye.A.; FILATOV, I.S.

Dielectric properties of insulating materials following gamma irradiation. Part 1. Methods for measuring the dielectric characteristics during irradiation. Izv.vys.uch.zav.; fiz. no.4:163-170 '62. (MIRA 15:9)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V. Kuybysheva.
(Dielectrics, Effect of radiation on) (Gamma rays)

S/139/63/000/001/024/027
E202/E420

AUTHORS: Potakhova, G.I., Vorozhtsov, B.I., Filatov, I.S.

TITLE: Dielectric properties of insulating materials during gamma-irradiation. IV. Epoxy compound [illegible]-6 (ED-6)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeni, . Fizika, no.1, 1963, 155-159

TEXT: The results of studying the dielectric losses and permittivity of ED-6 compound during gamma irradiation are given. Both the effect of the intensity of the dose and cumulative dose of radiation was considered in terms of the dielectric characteristics of the compound in relatio, to the frequency of the external field. The investigations were carried out at various temperatures, in atmospheric conditions, in vacuo and under tropical humidity. Of particular interest was the study of the effect of quartz filler on the dielectric properties of the above compound under the conditions of irradiation. Similar methods to those described previously (Izv. vuzov SSSR, Fizika, no.6, 1962, 143) were used. In spite of the presence of the polar epoxy groups the dependence of tan δ for pure ED-6 on the frequency is very weak and disappears with

Card 1/3

Dielectric properties ...

increasing temperature. Irradiation has little effect on the above relation and on the magnitude of tan δ. These differences were calculated when irradiating with an intensity of 670 r/min. The electric breakdown of pure ED-6 showed that when the irradiating dose is of the order of 2400 r/min there is no change in the breakdown values. ED-6 with quartz filler when exposed to gamma irradiation showed a change in tan δ which was most effective at low frequencies and decreased with increasing frequencies and temperatures. Experiments carried out in vacuo showed that the latter phenomena are due to the intrinsic changes within the sample itself and not a result of secondary phenomena. It was found that the discrepancies in tan δ between theoretical and experimental values increase with frequency; the calculated values after irradiation were of the order 2.8×10^{-6} while the experimental values were 1.6×10^{-2}. It was concluded that the effect of gamma irradiation for dose levels up to 650 r/min in the region of low frequencies leads to the increase of tan δ in quartz filled ED-6. This effect decreases with increasing frequency of the electric field and temperature of the sample. The value of

Dielectric properties ...

tan δ in the quartz filled compound at a fixed frequency was determined by the intensity of the irradiating dose. It was also found that the specific volume resistivity of ED-6 decreases with the gamma irradiation. Finally, it was shown that in materials with a quartz filler the increase of tan δ during irradiation is due to the quartz. There are 5 figures and 2 tables.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physico-technical Institute at Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: November 30, 1961

Card 3/3

VOROZHTSOV, B.I.; NESTEROV, V.M.; ZAVOTRINSKAYA, Ye.A.; FILATOV, I.S.

Dielectric properties of insulating materials following gamma irradiation. Part 1. Methods for measuring the dielectric characteristics during irradiation. Izv.vys.uch.zav.; fiz. no.4:163-170 '62. (MIRA 15:9)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V. Kuybysheva.
(Dielectrics, Effect of radiation on) (Gamma rays)

15.8560

43537

S/196/62/000/023/004/006
E194/E155

AUTHORS: Vodop'yanov, K.A., Vorozhtsov, B.I., Potakhova, G.I., Lavrov, M.D., Nesmelova, Ye.S., Nesterov, V.M., Vorozhtsova, I.G., Ol'shanskaya, N.I., Zimina, Ye.A., Mikhaylova, T.G., Sitozhevskaya, G.V., and Filatov, I.S.

TITLE: The influence of betatron radiation on the dielectric properties of certain electrical insulating materials

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.23, 1962, 12-13, abstract 23 B 67. (In collection: Elektron. uskoriteli (Electronic Accelerators), Tomsk, Tomskiy un-t, 1961, 308-318)

TEXT: The temperature and frequency characteristics of electrical insulating materials were investigated before and after γ-irradiation at dosages ranging from 10^4 to 2 x 10^5 rads with a dosage rate ranging from 300 to 1300 rads/minute at temperatures of -60, -20 and +60 °C and under tropical conditions (40 °C and relative humidity of 98%); the source of radiation was a

Card 1/3

15 MeV betatron. The characteristics of polyethylene were not altered by a radiation dose of 10^5 rads (the measurements were made at about 10^9 c/s). The low-frequency tan δ of plastic АГ-4 (AG-4) increased (particularly after irradiation under tropical conditions and at -60 °C) but the value in the frequency range 10^5 - 10^6 c/s did not alter. Evidently irradiation increases the resistive component of loss by conductivity and does not alter the relaxation components. Similar results were obtained for plastics K-114-35, K-211-3 and ФКПМ-25 (FKPM-25). In the case of textolite with a silicoorganic binder СКМ-1 (SKM-1), a dosage rate of 500 rads/min first increases the low-frequency tan δ only up to about 10^5 rads, and then diminishes it. Above 1200 rads/min the tan δ steadily decreases. It is possible that with heavy dosages and high dosage rates a process of binding together reduces the tan δ. In the silicoorganic resins 14Р-2 (14R-2), 14R-6 and 14R-15, dosage rates of 500 rads/min and a dosage of 10^5 rads cause a small increase in conductivity and tan δ at low frequency, but this change disappears as temperature curves are being taken, so that the shape of the reverse temperature curve coincides with that

The influence of betatron radiation.. S/196/62/000/023/004/006
E194/E155

for the non-irradiated material. Irradiation of varnishes K-47, 976-1, and MPM -16 (MGM-16) under various conditions caused no change in their electrical insulating properties. Irradiation of steatite ceramic (1% BaO, 91.6% Onot talc, 5.2% kaolin, 3.2% boracite) (with a dosage of 2 x 105 rads) did not alter the shape of the temperature curve of tan δ (measured at 10^7 c/s) either in weak fields (945 V/cm) or in strong (1890 V/cm). With a dosage of 2.12 x 10^7 rads, tan δ measured at 945 V/cm was not altered at low temperatures but increased appreciably at temperatures above 400 °C.

13 illustrations, 31 references.

[Abstractor's note: Complete translation.]

Card 3/3

42207
S/139/62/000/005/012/015
E073/E535

15,9530

AUTHORS: Ol'shanskaya, N.I., Vorozhtsov, B.I.

TITLE: On the changes in dielectric losses in crystallizing polymers due to the effect of ionizing radiations

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.5, 1962, 150-155

TEXT: According to published results, it can be anticipated that irradiation will cause not only a considerable change in tan δ but also in the dependence of this change on the degree of crystallization of the irradiated specimen. Since the role of the phase state of the polymer on the changes in the dielectric properties during irradiation have so far not been studied, the dielectric losses were investigated in commercial high and low pressure polyethylene, polyamide 68, Ftoroplast-3 [Abstractor's note: Kel-F] and lavsan [Abstractor's note: dacron] after X-ray, ultraviolet and γ-irradiation; tan δ and ε were measured in the frequency range 40 to 10^5 c.p.s. Results: ultraviolet irradiation increased tan δ in the entire investigated frequency range; the increase was the higher the greater the dose, the lower the frequency of the external field

Card 1/2

On th[illegible]hanges in dielectric ...

and th[illegible] greater the degree of crystallization. The changes are reversi[illegible]le - when the irradiation was stopped the initial dielectric losses were re-established after 3 to 24 hours, depending on the type of polymer. X-ray irradiation produced an immediate increase in tan δ which depended little on the absorbed dose and, as soon as the irradiation was stopped, the initial conditions were re-established; again the specimens with the lowest degree of crystallization were the most resistant to the effects of irradiation. The effect of γ-irradiation was similar to that of X-ray irradiation for specimens with a low degree of crystallization but in specimens with a high degree of crystallization tan δ was found to depend on the absorbed dose. Irradiation caused changes in the conductance as well as in the dielectric polarization. There are 8 figures and 4 tables.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V. V. Kuybysheva
(Siberian Physico-Technical Institute of the Tomsk State University imeni V. V. Kuybyshev)

SUBMITTED: September 30, 1960 (initially)
December 28, 1961 (after revision)

Card 2/2

S/139/62/000/003/003/015
E194/E335

24,7800

AUTHORS: Vorozhtsov, B.I., Nesterov, V.M. and Ul'shanskaya, N.I.

TITLE: The dielectric properties of gamma-irradiated insulating materials 2. Polyethylene

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no. 5, 1962, 34 - 37

TEXT: At the instant of irradiation tan δ and the conductivity of the polyethylene were found to increase, particularly when the material was irradiated at a low temperature. In the case of irradiation at 70 °C the electric strength diminished as the radiation dose was increased but within the dosage range of 0 - 10^6 rads the conductivity was independent of the dose and tan δ was independent of the dose in the range 0 - 3 x 10^5 rads. Moreover, the increase in tan δ was not great at high frequency and as polyethylene is used as a high-frequency dielectric it may, for practical purposes, be considered gamma-radiation stable and may be recommended for use in equipment operating in gamma-radiation zones of up to 3 000 rads/min. There are 2 figures and 2 tables.

Card 1/2

S/139/62/000/005/003/015
E194/E335

The dielectric properties ....

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Physicotechnical Institute of Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: July 10, 1961

Card 2/2

VOROZHTSOV, B.I.

Electrical properties of fused quartz. Izv. TPI 95:314-324 '58.
(MIRA 14:9)

1. Predstavleno chlenom-korrespondentom AN SSSR V.D. Kuznetsovym.
(Quartz--Electric properties)

VOROZHTSOV, B.I.; FILATOV, I.S.

Effect of gamma rays on the dielectric properties of vacuum-tight ceramics. Izv. vys. ucheb. zav.; fiz. no. 3; 7-11 '64. (MIRA 17:9)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.

NESMELOVA, Ye.S.; VODOP'YANOV, K.A.; VOROZHTSOV, B.I.

Effect of gamma radiation on the dielectric properties of electric insulating materials. Part 6: Compounds of polyester and epoxide resins. Izv.vys.ucheb.zav.; fiz. no.2:120-124 '61. (MIRA 14:7)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V.Kuybysheva.
(Electric insulators and insulation) (Resins, Synthetic)
(Materials, Effect of radiation on)

22450

9,4300(1136,1145,1043)
21,4210

S/089/60/009/006/010/011
B102/B212

AUTHORS: Vodop'yanov, K. A., Vorozhtsov, B. I., Lavrov, M. D., Nesmelova, Ye. S., Potakhova, G. I.

TITLE: Effect of radioactive irradiation on dielectric properties of electric insulation materials

PERIODICAL: Atomnaya energiya, v. 9, no. 6, 1960, 498-500

TEXT: Since solid organic dielectrics are used as electric insulation materials in devices which are exposed to irradiation, it is important to investigate the effect of irradiation on dielectrics. The authors have investigated the frequency and temperature characteristics of the dielectric constants and the loss angles of polyethylene, fluoroplast-4, and of "product-10" (a mixture of polystyrene and vinyl naphthalene) before and after gamma irradiation at dose rates of 400 - 1200 r/min and doses of 2000 - 100,000 r. A 15-Mev betatron was used as radiation source. The specimens were 1-2 mm thick discs. The electrophysical properties of these dielectrics have been analyzed 1-3 hr after irradiation. The frequency dependence of ε and tan δ hardly changed for doses up to

Card 1/3

Effect of radioactive...

50,000 r. The loss angle of fluoroplast-4 increased a little at 10^7 cps and 10^6 r, and the other materials showed changes within the limits of error of measurement. Such a radiation stability was observed at various temperatures. ε changed a little in all substances under the action of temperature and irradiation. The frequency and temperature dependence of tan δ, ε, and resistivity has also been studied for glass textolite СКМ-1 (SKM-1) before and after gamma irradiation. At low frequencies, it showed an increase in the loss angle (and a decrease in resistivity) after irradiation. Similar results have been obtained for the plastics АГ-4 (AG-4), К-211-3 (K-211-3), К-114-35 (K-114-35), ФКПМ-25 (FKPM-25) which are produced from phenol-formaldehyde resins. The loss angle in these materials is determined by relaxation processes, as was shown by tests at -60°C. At certain frequencies, polyamide-68 showed an affection on the temperature dependence of tan δ (see Fig. 6). Similar effects have been observed in other organic, polar dielectrics, such as PVC, Lavsan, and FKPM-25. Two organo-silicon resins, 14р-2 (14r-2) and 14р-6 (14r-6), have also been studied. The first had been produced from organo-silicon synthetic rubber, titanium dioxide, and benzoyl peroxide, and the second

Effect of radioactive...

contained white soot and zinc white instead of titanium dioxide. Compared with the latter, the first showed a smaller resistivity and a smaller tan δ. But both materials show a decrease of the loss angle with increasing frequency. The irradiation (50,000 r) brought about a decrease of tan δ for 14r-6 and an increase of it for 14r-2 at all frequencies. The dielectric losses in these resins exhibit an ohmic character. The authors thank N. I. Ol'shanskaya, T. G. Mikhaylova, L. T. Murashko, and A. I. Tovbina for their assistance. There are 7 figures.

SUBMITTED: December 1, 1959

X

Card 3/4
3

VODOP'YANOV, K.A.; VOROZHTSOV, B.I.; POTAKHOVA, G.I.

Effect of gamma radiation on the dielectric properties of some electric insulation materials. Part 2. Phenol formaldehyde plastics. Izv.vys.ucheb.zav.; fiz. no.3:133-137 '60. (MIRA 13:7)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete im. V.V.Kuybysheva.
(Gamma rays) (Electric insulators ans insulation)

S/139/60/000/03/024/045
E073/E335

AUTHORS: Vodop'yanov, K.A., Vorozhtsov, B.I. and Potakhova, G.I.

TITLE: Influence of Gamma-irradiation on the Dielectric Properties of Some Electrical Insulation Materials. Part II. Phenolformaldehyde Plastics

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No 3, pp 133 - 137 (USSR)

ABSTRACT: The dielectric constant, the dielectric loss angle and the electric strength of a number of phenolformaldehyde plastics were measured before and after gamma-irradiation with doses of 30 000 - 100 000 roentgen and with intensities of 500-530 R/m. After irradiation, the greatest changes in the loss angle were observed at -60 °C and under tropical conditions. The relaxation component of the losses in the investigated materials after irradiation showed hardly any change. No change was observed in the dielectric constant of the investigated materials as a result of the gamma-irradiation. The electric strength of phenolformaldehyde plastics showed hardly any change as a result of the gamma-irradiation.

Card1/2

VB

S/139/60/000/03/024/045
E073/E335

Influence of Gamma-irradiation on the Dielectric Properties of Some Electrical Insulation Materials. Part II. Phenolformaldehyde Plastics

There are 4 figures, 1 table and 4 Soviet references.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Institute of Physics and Technology of Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: October 21, 1959

Card 2/2

83360

S/139/60/000/004/018/033
E201/E591

21.6100

AUTHORS: Vodop'yanov, K.A., Vorozhtsov, B.I. and Mikhaylova, T.G.

TITLE: The Effect of Gamma-Radiation on the Dielectric Properties of Some Insulating Materials. IV. Polyethylene

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.4, pp.156-159

TEXT: The authors investigated polyethylene in an as-prepared state and irradiated with C^{60} and 15 MeV betatron γ-rays. The permittivity (ε) and tan δ were measured between 40 and 10^8 c/s at temperatures from -100 to +100°C. A differential unbalanced bridge was used at low frequencies and the change of resistance method was employed at high frequencies. The samples used in the permittivity and tan δ measurements were discs of 1-2 mm thickness. The bulk resistivity (ρ_v) was measured between 20 and 70°C with a galvanometer circuit. The electric breakdown strength (E_b) was measured by applying short inhomogeneous pulses of 50 c/s frequency at room temperature (the samples used in these tests were in the form of foil 0.11-0.16 mm thick). Polyethylene samples were irradiated at +70°C, at -70°C and under "tropical" conditions (+40°C, 98% humidity);

Card 1/3

83360

S/139/60/000/004/018/033
E201/E591

The Effect of Gamma-Radiation on the Dielectric Properties of Some Insulating Materials. IV. Polyethylene

in the latter case the samples were kept for 48 hours under "tropical" conditions before irradiation. The radiation dose was $5 \times 10^4 - 10^5$ r supplied at the rate of 500 r/min. The recorded temperature dependences of ε and tan δ are given in Figs 1 and 4. Fig.2 gives the frequency dependence of ε and tan δ and Fig.3 the temperature dependence of ρ_v. The results can be summarized as follows.

1) Irradiation of polyethylene with γ-rays under room conditions and at +70°C did not affect the mechanisms of dielectric loss and polarization and did not alter the absolute values of ε, tan δ or E_b.
2) Irradiation at -70°C raised slightly tan δ and the electrical conductivity (Table 1).
3) Irradiation under "tropical" conditions reduced tan δ at low frequencies and raised ρ_v (Table 1).

Acknowledgments are made to L. A. Prudnikova and V. D. Dedkov for their help in the experiments. There are 4 figures, 1 table and

Card 2/3

83360

S/139/60/000/004/018/033
E201/E591

The Effect of Gamma-Radiation on the Dielectric Properties of Some Insulating Materials. IV. Polyethylene

9 references: 5 Soviet and 4 English.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V. V. Kuybysheva
(Siberian Physico-Technical Institute at Tomsk State University imeni V. V. Kuybyshev)

SUBMITTED: December 3, 1959

X

Card 3/3

83359

S/139/60/000/004/017/033
E201/E591

AUTHORS: Vodop'yanov, K.A., Vorozhtsov, B.I. and Mikhaylova, T.G.

TITLE: The Effect of Gamma-Radiation on the Dielectric Properties of Some Insulating Materials. III Lacquers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.4, pp. 152-155

TEXT: The authors investigated the effect of γ-radiation (15 MeV, from a B-15 betatron) on permittivity and tan δ of the insulating lacquers K-47 (Fig.1), 976-1 (Fig.2) and MGM-16 (Fig.3). The lacquers received a dose of 10^4 r at the rate of 500 r/min at +20, +60, or -60°C; some of the irradiations were carried out under conditions of tropical humidity. Permittivity and tan δ were measured with a differential unbalanced bridge (audio frequencies), quasi-resonance KV-1 (105 - 10 c/s) and a Q-meter UKV-1 (10 c/s). These of frequency were measured before and after irradiation as a function the maximum working temperature. Dielectric losses of the lacquers consisted of temperature from -60°C to values and the relaxation losses. The absolute and relaxation and frequency dependences of the

Card 1/2

83359

S/139/60/000/004/017/033
E201/E591

The Effect of Gamma-Radiation on the Dielectric Properties of Some Insulating Materials. III Lacquers

permittivity and tan δ of the lacquers were practically unaffected by γ-radiation (Figs.1-3). Acknowledgments are made to G. V. Sitozhevskaya, V. D. Dedkov and Ye. A. Zimina for their help in carrying out the experiments. There are 3 figures and 3 references: 2 Soviet and 1 English.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V. V. Kuybysheva (Siberian Physico-Technical Institute at Tomsk State University imeni V. V. Kuybyshev)

SUBMITTED: October 21, 1959

Card 2/2

VODOP'YANOV, K.A.; VOROZHTSOV, B.I.; LAVROV, M.D.; MESMELOVA, Yu.S.; POTAKHOVA, G.I.

Effect of radiation on the dielectric properties of electric insulating materials. Atom. energ. 9 no.6:498-500 D '60. (MIRA 13:12)
(Gamma rays) (Dielectrics)

24.2100 1035, 1043, 1138, 1407

S/139/61/000/002/013/018
E194/E435

AUTHORS: Nesmelova, Ye.S., Vodop'yanov, K.A. and Vorozhtsov, B.I.

TITLE: The Influence of Gamma Radiation on the Dielectric Properties of Certain Electrical Insulating Materials VI. Compounds Based on Polyester and Epoxide Resins

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1961, No.2, pp.120-124

TEXT: The dissipation factor (tan δ) and permittivity of compounds КГМС-2 (KGMS-2), К-31, МВК-1 (MBK-1) and ЭД-6 (ED-6) were determined over a wide range of temperature and frequency before and after gamma radiation with a dose of 10^5 rads. The general conclusion is that the radiation did not alter the mechanism of dielectric loss or significantly impair the electrical properties of the compounds. The measurements were made over the frequency range of 40 to 10^8 c/s, using an unbalanced bridge method in the range of 40 to 10^4 c/s, a Q meter in the range 10^5 to 10^6 c/s and an improved method of determining change of resistance in the range 10^7 to 10^8 c/s. The change of dissipation factor and permittivity with temperature was studied over the range - 60°C

S/139/61/000/002/013/018
E194/E435

The Influence of Gamma ...

to the softening temperatures of the specimens at frequencies between 40 c/s and 1 Mc/s. The specimens were discs 30 to 50 mm diameter and 1 to 3 mm thick. The electrodes were prepared by vacuum evaporation of silver. The specimens were irradiated in a betatron type B-15 (B-15) designed by the Tomskiy politekhnicheskiy institut (Tomsk Polytechnical Institute). The rate of dosage was 500 rads/min and the total dose in all cases was 10^5 rads. Irradiation was carried out at various temperatures and humidities. Fig.1 gives the test results for a compound KGMS-2 at (curve 1) 40 c/s and (curve 2) 1 Mc/s. The points marked o - relate to material not irradiated, those marked x - to irradiation at a temperature of 20°C, those denoted by a triangle to irradiation at a temperature of +60°C, those denoted by a square to irradiation at -60°C and those denoted by a black circle to irradiation under tropical conditions (+50°C, 98% relative humidity). The properties of this same compound as function of frequency before and after irradiation at a temperature of +20°C are plotted in Fig.2 and from the curves it is concluded that in this compound the losses are due to a combination of relaxation

S/139/61/000/002/013/018
E194/E435

and conductivity loss. Radiation does not alter the nature of the temperature relationship of the electrical properties. The results with compound K-31 are plotted in Fig.3 before and after irradiation at a temperature of +20°C. It will be seen that [illegible] resistivity which were found to be hardly affected by irradiation under any of the conditions used. Results for compound ED-6 (with quartz sand filler) are plotted in Fig.4 and it will be seen that irradiation has hardly any effect on the results. Graphs of dissipation factor and permittivity of this compound as function of temperature and frequency are plotted in Fig.5 before and after irradiation at a frequency of 40 c/s (curve 1), at a frequency of 10^3 c/s (curve 2) and at a frequency of 1 Mc/s (curve 3). It is concluded that in this compound the dielectric losses consist of relaxation and conductivity losses. Radiation does not alter the nature of the dielectric losses in compound ED-6 and the changes in dissipation factor are small. Test results for compound

S/139/61/000/002/013/018
E194/E435

The Influence of Gamma ...

MBK-1 are plotted in Fig.6; there is almost a linear decrease in the dissipation factor as the frequency rises and that lower values are obtained with irradiated samples. It is concluded that in this compound the dielectric loss is of dipole nature. There are 6 figures and 2 Soviet references.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physicotechnical Institute at the Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: June 30, 1960

MUR, V.I.; VOROZHTSOV, G.N.

Triazine derivatives. Part 2: Data on the spectral color of some triazine monoazo dyes possessing active chlorine atoms. Zhur.ob.khim. 30 no.6:1981-1985 Je '60. (MIRA 13:6)

1. Institut organicheskikh poluproduktov i krasiteley imeni K.Ye.Voroshilova.
(Triazine) (Azo dyes)

KOZHEVNIKOV, A.R., prof.; POPOVA, G.I., dots.; VOROZHTSOV, I.P., kand. tekhn. nauk, dots.; GERASENKOV, B.I., kand. sel'-khoz. nauk; YUMAGULOV, G.L., kand. sel'khoz. nauk; MAR'YASOV, V.G., assistent; VINOGRADOVA, N.I., kand. sel'-khoz. nauk; ROKTANEN, L.P., dots., kand. biol. nauk; KOKHOMSKIY, F.M., Geroy Sotsialisticheskogo Truda, zasl. zootekhnik RSFSR; MAKHNOVSKIY, M.K., dots., kand. ekon. nauk; ARTAMONOV, F.D., assistent; MAKAROVA, I.V., red.

[Corn in the Virgin Territory and Western Siberia] Kukuruza v tselinnom krae i Zapadnoi Sibiri. Moskva, Kolos, 1965. (MIRA 18:9)
229 p.

1. Omskiy sel'skokhozyaystvennyy institut im. S.M.Kirova (for Kozhevnikov, Popova, Mar'yasov, Vinogradova, Kokhomskiy, Makhnovskiy, Artamonov). 2. Zamestitel' direktora po nauchnoy rabote Severo-Kazakhstanskoy opytnoy stantsii (for Yumagulov). 3. Zaveduyushchiy laboratoriyey kukuruzy Sibirskogo nauchno-issledovatel'skogo instituta sel'skogo khozyaystva (for Gerasenkov). 4, TSelinogradskiy sel'skokhozyaystvennyy institut (for Roktanen).

VOROZHTSOV, Ivan Pavlovich

[Machinery for cultivating corn] Mashiny dlia vozdelyvaniia kukurusy. (MLRA 10:2)
Moskva, Mashgiz, 1956. 170 p.
(Corn (Maize)) (Agricultural machinery)

VOROZHTSOV, Ivan Pavlovich

[Over-all mechanization of haying] Kompleksnaia mekhanizatsiia uborki trav. Moskva, Mashgiz, 1958. 72 p.

(MIRA 13:6)

(Hay--Harvesting)

Vorozhtsov, Ivan Pavlovich

Mashiny Dlya Vozdelyvaniya Kukuruzy (Machines for Cultivating Corn)
Moskva, Mashgiz, 1956.
170 P. Illus., Diagrs., Tables (Biblioteka Mekhanizatora Sel'Skogo Khozyaystva)

VOROZHTSOV, L. P.

PHASE I BOOK EXPLOITATION SOV/4350

Soveshchaniye po [illegible] i primeneniyu proizvodnykh piridina i khinolina [illegible] 1957

Khimiya, tekhnologiya [illegible] proizvodnykh piridina i khinolina; materialy [illegible] (Chemistry, Technology and Utilization of [illegible] and Quinoline Derivatives; Materials of the [illegible] Riga, Izd-vo AN Latviyskoy SSR, 1960. 299 p. [illegible] inserted. 1,000 copies printed.

Sponsoring Agencies: [illegible] nauk Latviyskoy SSR. Institut khimii; Vsesoyuznoye [illegible] obshchestvo.

Ed.: S. Bashanova, [illegible] A. Klyavinya; Editorial Board: Yu. A. [illegible] Candidate of Chemistry, E. V. Vanaga, Candidate [illegible] (Resp. Ed.), L. P. Zalukayev, Doctor of Chemistry [illegible] Kalnyn'.

PURPOSE: This book is [illegible] for organic chemists and chemical engineers.

COVERAGE: The collection contains 33 articles on methods of synthesizing [illegible] pyridine, quinoline, and their derivatives [illegible] sources. No personalities are mentioned. [illegible], and references accompany the articles.

Vorozhtsov, L. P., [illegible] Vitkevichus. [Moskovskiy khimiko-tekhnologicheskiy institut imeni D. I. Mendeleyeva (Moscow Institute for [illegible] Technology imeni D. I. Mendeleyev)]. Some [illegible] -Hydroxy- 1,2,3,4,-Tetrahydroquinoline. 229

Pilyugin, G. T. [Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)] The Interaction of N-aryl-quinaldine Quaternary [illegible] Diazo Compounds 237

Vul'fson, N. S., L. [illegible], and S. L. Davydova (All-Union Scientific [illegible] Institute for Semifinished Products and Dyes, [illegible] the Chemical Industry, USSR). Cyanoacetal and Cyano[illegible] Derivatives of Some Nitrogen-Containing Heterocyclic [illegible] 243

IV. THE USE OF [illegible] OF THE QUINOLINE SERIES IN [illegible]

Tinovskaya, Ye. S. [[illegible] sel'skokhozyaystvennyy institut (Kostroma [illegible] Institute)]. The Use of 8-Hydroxyquinoline in [illegible] Analysis 253

Bankovskiy, Yu. A., [illegible], and V. I. Kuznetsov (Chemical Institute of [illegible] of Sciences Latviyskaya SSR).8-Mercaptoquinoline [illegible] as an Analytical Reagent 271

Mikhaylov, G. I. (All-[illegible] Scientific Research Institute for Chemical Reagents) [illegible] in the Synthesis of 1,10-Phenanthroline 283

Babko, A. K., and [illegible] (Kiyevskiy gosudarstvennyy universitet imeni [illegible] (Kiyev State University imeni T. G. Shevchenko) [illegible] of Complex Formation in the System: Metal [illegible] (Iodide) – Organic Base 289

2/1

VOROZHTSOV, N.N., mladshiy; BARKHASH, V.A.; ANICHKINA, S.A.

Decafluorodiphenylmethane and its derivatives. Dokl. AN SSSR 166 no.3:598-601 Ja '66. (MIRA 19:1)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Vorozhtsov mladshiy). Submitted July 8, 1965.

SHEYN, S.M.; KOKORIN, I.A.; VOROZHTSOV, N.N., akademik

Replacement of aromatically bound chlorine by the amino group. Part 10: Reaction kinetics of ortho-chlorobenzotrifluoride, 2-chloro-1,4-bis-(trifluoromethyl)-benzene, and 4-chloro-1,2-bis-(trifluoromethyl)-benzene with an aqueous solution of ammonia. Izv. SO AN SSSR no.7 Ser. khim. nauk no.2:85-89 '65. (MIRA 18:12)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR. Submitted June 23, 1964.

YAKOBSON, G.G.; VLASOV, V.M.; VOROZHTSOV, N.N., mladshiy

Interaction of aromatic sulfofluorides with potassium fluoride. Zhur.VKHO 10 no.4:466-467 '65. (MIRA 18:11)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

VOROZHTSOV, N.N., mladshiy; BARKHASH, V.A.; PRUDCHENKO, A.T.; KHOMENKO, T.I.

Synthesis of polyfluorinated chromones and flavones. Dokl. AN SSSR 164 no.5:1046-1049 O '65. (MIRA 18:10)

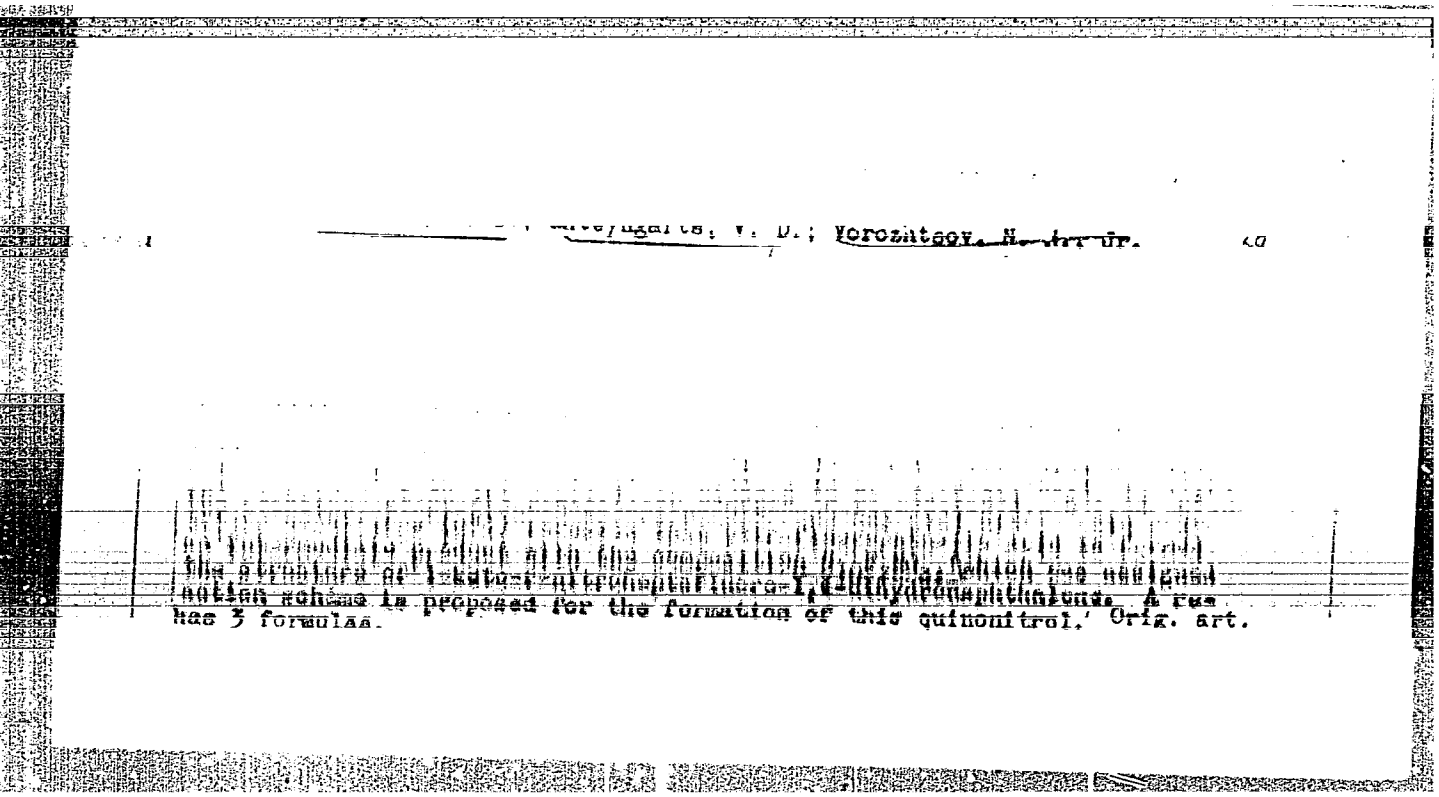
1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Vorozhtsov).

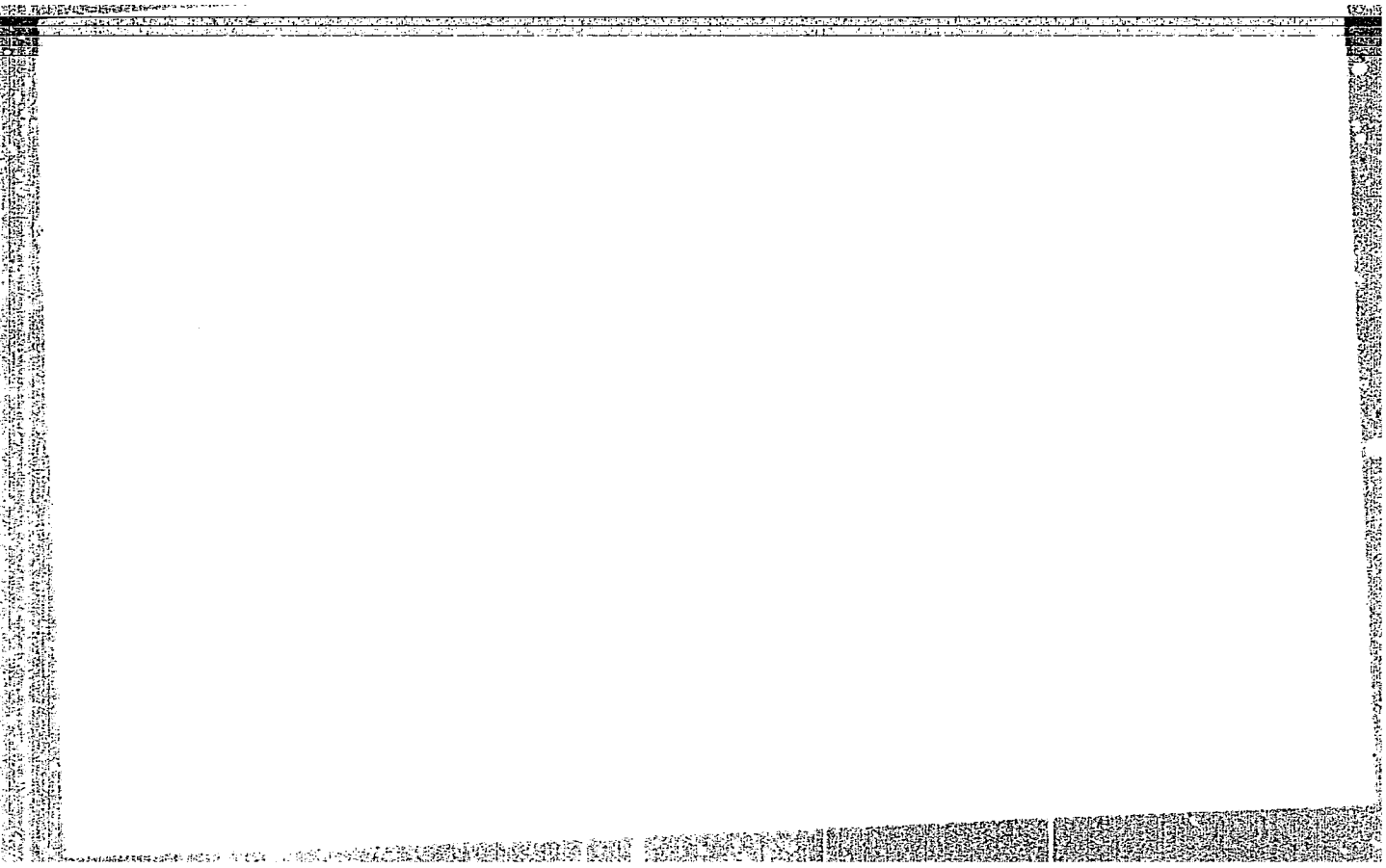
VOROZHTSOV, N.N., mladshiy; MIKHAYLOVA, I.F.

Synthesis and transformation of derivatives of 2-methyl-3',4'-dihydronaphth [1',2' : 4,5] oxazoles. Izv. SO AN SSSR no.3 Ser. khim. nauk no.1:82-87 '65. (MIRA 18:8)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.





APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020005-8"

YAKOBSON, G.G.; SHTEYNGARTS, V.D.; NIKOSHIN, A.I.; VOROZHTSOV, N.N., mladshiy.

Some reactions of decafluorobiphenyl. Dokl. AN SSSR 159 no.5 (MIRA 18:1)
1109-1112 D '64

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Vorozhtsov, mladshiy).

YAKOBSON, G.G.; PLATONOV, V.Ye.; VOROZHTSOV, N.N., mladshiy

Aromatic fluoro derivatives. Part 16: Preparation of hexafluorobenzene and polyfluorochloro derivatives of benzene. Zhur. ob. khim. 35 no.7:1150-1161 Jl '65. (MIRA 18:8)

1. [illegible]

VOROZHTSOV, N.N., mladshiy; BARKHASH, V.A.; PRUDCHENKO, A.T.; SHCHEGOLEVA, G.S.

Pentafluorobenzoylacetic ester. Zhur. ob. khim. 35 no.8; 1501 Ag '65. (MIRA 18:8)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

VOROZHTSOV, N.N., mladshiy; BARKHASH, V.A.; PRUDCHENKO, A.T.; KHOMENKO, T.I.

Synthesis of polyfluoro derivatives of γ-benzopyrone. Zhur. ob. khim. 35 no.8:1501-1502 Ag '65. (MIRA 18:8)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

VOROZHTSOV, N.N., mladshiy; BARKHASH, V.A.; IVANOVA, N.G.; ANICHKINA, S.A.; ANDREYEVSKAYA, O.I.

Production and reactions of pentafluorophenyl and heptafluoronaphthyl magnesium chlorides. Dokl. AN SSSR 159 no.1 125-128 N '64. (MIRA 17:12)

1. Institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk. 2. Chlen-korrespondent AN SSSR (for Vorozhtsov, mladshiy).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001861020005-8"

YAKOBSON, G.G.; KOBRINA L.S.; VOROZHTSOV mladshiy, N.N.

Aromatic nucleophilic substitution. Part 4: Reaction of pentachloro derivatives of benzene with sodium methylate. Zhur. ob. khim. 35 no.1:137-141 Ja '65. (MIRA 18:2)

1. Institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

YAKOBSON, G.G.; SHTEYNGARTS, V.D.; VOROZHTSOV, N.N., mladshiy

Preparation of octafluoronaphthalene and decafluorobiphenyl. Izv. AN SSSR. Ser. khim. no.8:1551 Ag '64. (MIRA 17:9)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

YAKOBSON, G.G.; ODINOKOV, V.N.; PETROVA, T.D.; VOROZHTSOV, N.N., mladshi/

Aromatic fluorine derivatives. Part 14: Tetrafluoroterephthalic acid. Zhur. ob. khim. 34 no.9:2953-2958 S '64. (MIRA 17:11)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

YAKOBSON, G.G.; SHTEYNGARTS, V.D.; FURIN, G.G.; VOROZHTSOV, N.N., mladshiy

Reaction of hexafluorobenzene with aqueous ammonia. Zhur. ob. khim. 34 no.10:3514 O '64. (MIRA 17:11)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

YAKOBSON, G.G.; PETROVA, T.D.; KANN, L.I.; SAVCHENKO, T.I.; PETROV, A.K.; VOROZHTSOV, N.N., mladshiy

Production of fluorinated heterocyclic compounds from hexafluorobenzene. Dokl. AN SSSR 158 no.4:926-928 O '64. (MIRA 17:11)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Vorozhtsov).

YAKOBSON, G.G.; KOBRINA, L.S.; BELOVA, L.F.; VOROZHTSOV mladshiy, N.N.

Aromatic nucleophilic substitution. Part 5: Reaction of polychlorobenzenes with an aqueous solution of dimethylamine. Zhur. ob. khim. 35 no.1:142-145 Ja '65. (MIRA 18:2)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

VORCZHTSOV, N.N., mladshiy; SOKOLENKO, V.A.; YAKOBSON, G.G.

Aromatic fluorine derivatives. Report No.11: Production and reactions of 2,6-dinitrofluorobenzene. Izv. Sib. otd. AN SSSR no.10:87-90 '62 (MIRA 17:3)

1. Institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

YAKOBSON, G.G.; RUBINA, T.D.; VOROZHTSO., N.N. mladshiy

Aromatic fluorine derivatives. Part 13: Hydrolysis of fluohalobenzenes. Zhur. ob. khim. 34 no. 3:936-941 Mr '64. (MIRA 17:6)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

VOROZHTSOV, N.N., mladshiy; PLATONOV, V.Ye.; YAKOBSON, G.G.

Preparation of hexafluorobenzene from hexachlorobenzene. Izv.AN SSSR.Ser.khim. no.8:1524 Ag '63. (MIRA 16:9)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

(Benzene derivatives)

KOPTYUG, V.A.; VOROZHTSOV, N.N. (mladshiy), red.; SHPAKOVSKAYA, L.I., red.; OVCHINNIKOVA, T.K., tekhn. red.

[Isomerization of aromatic compounds] Izomerizatsiia aromaticheskikh soedinenii. Pod red. N.N.Vorozhtsova. Novosibirsk, Izd-vo Sibirskogo otd-niia AN SSSR, 1963. 175 p. (MIRA 17:3)

1. Chlen-korrespondent AN SSSR (for Vorozhtsov).

YAKOBSON, G.G.; IOFFE, A.E.; VOROZHTSOV, mladshiy, N.N.

Alkylation and arylation of aromatic amines in the presence of metal fluorides. Izv. SO AN SSSR no.3 Ser. khim. nauk no.1: 156-158 '63. (MIRA 16:8)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR i Khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva, Moskva.
(Amines) (Alkylation) (Arylation)

KOPTYUG, V.A.; ISAYEV, I.S.; VOROZHTSOV, N.N., mladshiy

Migration of the methyl group in a toluene molecule under the effect of aluminum bromide and hydrogen bromide. Dokl.AN SSSR 149 no.1:100-103 Mr '63. (MIRA 16:2)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Vorozhtsov ml.)

(Toluene) (Isomerization) (Methyl group)

ANDREYEVA, M.A.; VOROZHTSOV, N.N., mladshiy; KRIZHECHKOVSKAYA, N.I.; STEPANOV, B.I.; YAKOBSON, G.G.

Substitution of halogen in azo compounds. Part 17: Reactions of polyhaloazo compounds. Using the reaction for establishing the structure of some aromatic halogen-containing compounds. Zhur.ob.khim. 33 no.3:988-991 Mr '63. (MIRA 16:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva i Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.
(Azo compounds)
(Halogen)

LISITSYN, V.N.; BAKULINA, G.G.; SEDOVA, T.V.; VOROZHTSOV, N.N., mladshiy

Transformation of halogen-containing aromatic compounds in the presence of hexamethylenimine. Part 1: Substitution of a chlorine atom by a hydroxy group in o-chlorocarboxylic acids. Zhur.ob.khim. 32 no.11:3734-3737 N '62. (MIRA 15:11)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.
(Acids, Organic) (Chlorine compounds)
(Hydroxy compounds)

VOROZHTSOV, N.N., mladshiy

Isomerization reactions in the aromatic series. Zhur. VKHO 7 no.4:411-418 '62. (MIRA 15:8)

1. Chlen-korrespondent AN SSSR.
(Aromatic compounds) (Isomerization)

44348
S/200/62/000/010/002/002
D204/D307

5.3600

AUTHORS: Vorozhtsov, N.N. (Jr.), Sokolenko, V.A. and Yakobson, G.G.

TITLE: Aromatic derivatives of fluorine. XI. The preparation and reactions of 2-6, dinitrofluorobenzene (I)

PERIODICAL: Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya, no. 10, 1962, 87-90

TEXT: The new compound I (b.p. 150-155°C/10 mm Hg, m.p. 60-61°C) was smoothly prepared in 76-81% yields by heating 2,6-dinitrochlorobenzene (II) with anhydrous KF at 190°C. The F atom is activated by the adjacent electron-attracting NO_2-groups and may be readily displaced by nucleophilic reagents (MeOH, EtOH, PhOH, α- and β-naphthols: PhSH, aniline, piperidine) in the presence of KF, to give the corresponding 2,6-dinitrophenyl derivatives in ~ 80-90% yields. 2,6-dichlorofluorobenzene was made in up to 60% yields by the action of chlorine on I at 230-240°C, by the stepwise replacement of the nitro groups. The intermediate product, 2-fluoro-3-

Card 1/2

chloronitrobenzene, was also isolated. 1,2,3-Trichlorobenzene and 2,3-dichloronitrobenzene were similarly prepared from II. Chlorination of 2,6-dinitrohalogenobenzenes thus offers a method of obtaining benzene derivatives which are generally difficult to prepare. There are 2 tables.

ASSOCIATION: Institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk (Institute of Organic Chemistry, Siberian Branch of the AS USSR, Novosibirsk)

SUBMITTED: July 23, 1962

KOPTYUG, V.A.; VOLODARSKIY, L.B.; VOROZHTSOV ml., N.N.

Interaction of 2-halo-1-keto-1,2,3,4,-tetrahydronaphthalenes with hydroxylamine. Zhur.ob.khim. 32 no.5:1613-1619 My '62. (MIRA 15:5)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.
(Naphthalene) (Hydroxylamine)

YAKOBSON, G.G.; RUBINA, T.D.; VOROZHTSOV, mladshiy, N.N.

Production of fluorophenols by hydrolysis of fluorohalobenzenes. Dokl. AN SSSR 141 no.6:1395-1396 D '61. (MIRA 14:12)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Vorozhtsov, mladshiy).
(Phenol) (Benzene)

KOPTYUG, V.A.; GERASIMOVA, T.N.; VOROZHTSOV, N.N., mladshiy

Steric hindrances and reactivity of organic compounds. Part 11: β-Naphthalenesulfonic acid as a catalyst of isomerization of compounds with steric hindrances. Zhur.ob.khim. 31 no.10:3341-3343 O '61. (MIRA 14:10)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR.
(Naphthalenesulfonic acid) (Isomerization)

VOROZHTSOV, N.N., mladshiy; KOPTYUG, V.A.; KOMAGOROV, A.M.

Study of the isomerization of naphthalene monosulfonic acids by the tracer method. Zhur.ob.khim. 31 no.10:3330-3341 O '61. (MIRA 14:10)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva i Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR.
(Naphthalenesulfonic acid)

VORONTSOV, N.N.; KOPTYUG, V.A.

Mechanism of the catalytic isomerization of monochloronaphthalenes. Org. poluprod. i kras. no.1:87-91 '59. (MIRA 14:11)
(Isomerization)

YAKOBSON, G.G.; KOBRINA, L.S.; RUBINA, T.D.; VOROZHTSOV mladshiy, N.N.

Aromatic nucleophilic substitution. Part 1: Amination of polychlorobenzenes. Zhur.ob.khim. 33 no.4:1273-1277 Ap '63. (MIRA 16:5)

1. Novosibirskiy institut organicheskiy khimii Sibirskogo otdeleniya AN SSSR.

(Benzene) (Amination)

VOROZHTSOV, S., zasluzhennyy stroitel' (Tadzhikskaya SSR)

New designs of precast highway bridges. Avt.dor. 23 no.6:4-6 Je '60. (MIRA 13:6)
(Bridges, Concrete)

VOROZHTSOV, S.L.

Combined-system bridges. Dokl. AN Tadzh. SSR no.21:73-78 '57. (MIRA 11:7)

1.Tadzhikskiy sel'skokhozyaystvennyy institut.
(Bridges)

AUTHORS: Vodop'yanov, K. A., Vorozhtsova, I. G. 48-22-3-14/30

TITLE: Dielectric Losses in Mica Muscovite With Mineral Inclusions of Limonite and Biotite at a High Frequency (Dielektricheskiye poteri v slyude muskovite s mineralogicheskimi vklyucheniyami limonita i biotita na vysokoy chastote)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958 Vol. 22, Nr 3, pp. 283-287 (USSR)

ABSTRACT: In the present paper the authors investigated two types of inclusions in order to determine the role of the crystallization water and of Fe_2O_3 in the case of dielectric losses. Dielectric losses of muscovite with inclusions of limonite and biotite from the East-Siberian occurences at Chuysk and Kotuysk were investigated. The temperature-dependence tgδ of the muscovite with limonite-inclusions appears in form of a curve which passes a maximum. This maximum is observed with all investigated samples within the temperature interval of from 240 to 280°C. The absolute value of the maximum of tgδ depends on the number of molecules of the crystallization-water. The dielectric constant changes in all cases according to temperature. A triple cycle of temperature change, heating and

Card 1/4

cooling of the samples leads to a reduction of $tg\delta$ and in a change of its character of temperature-dependence (fig. 1). The decrease and disappearance of the temperature maximum $tg\delta$ is obviously explained by taking account of the fact that the major part of the crystallization water is removed from limonite ($Fe_2C_3 \cdot nH_2O$) within the temperature interval of from 200 to 300°C. The absolute value of the temperature maximum is also connected with the degree of spottedness. It may be stated on the strength of experimentally obtained data (fig. 2 and 3) that a temperature maximum $tg\delta$ can be observed with non-annealed muscovite with limonite-inclusions. There is no maximum of $tg\delta$ at 400°C; it occurs at 600°C. with thoroughly annealed samples. The annealing of the samples at 600°C weakens the binding power between the molecules which are solidly fastened both in limonite and in the fundamental mica. The orientation of these weakly bound polar molecules of the crystallization water results in the temperature maximum of the $tg\delta$. The comparative characteristic of the temperature-and frequency-dependence of the $tg\delta$ and of the ε of the pure muscovite and of that with biotite inclusions explains the ro-

le played by these inclusions. With measurements of ε and tgδ the surface of the biotite-spot is larger than the electrode-surface of the examined capacitor. Results are illustrated (fig. 4). Results of the measurement of the dependence of temperature and frequency of ε and tg δ of the muscovite with biotite-inclusions before and after annealing at 400 and 600°C are given (tables 4 to 7). ε does not depend on temperature. The determined rules governing the influence of the thermal treatment of pure muscovite and with inclusions of limonite and biotite on the dependence of tgδ on temperature agree well with the results of the loss in weight. A rapid loss in weight within the temperature interval of from 700 to 850°C was observed in pure muscovite from the deposit of Kolotovsk as well as with muscovite with limonite inclusions from the deposits of Chuysk. With muscovite with biotite inclusions, on the other hand, a continuous decrease in weight was observed within the whole temperature interval up to 800°C. The lower thermal resistance of biotite was already shown by Lashev (Ref 6). A qualitative X-ray analysis was also carried out in the course of the present work. "Laue" diffraction

Dielectric Losses in Mica Muscovite With Mineral Inclusions 48-22-3-14/30
of Limonite and Biotite at a High Frequency

samples of pure muscovite from the deposit of Kolotovsk were used. The result of the thermal treatment of the muscovite of inferior quality with biotite inclusions at 600 and 800°C and with limonite inclusions at 4000C was an improvement of its dielectric properties. The students L. M. Dubinina, G. M. Kosyachenko and G. V. Shpatenko. There are 7 figures, 1 table, and 8 references, 6 of which are Slavic.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gos. universitete im. V. V. Kuybysheva (Siberian Institute of Physics and Engineering at Tomsk State University imeni V. V. Kuybyshev)

AVAILABLE: Library of Congress

1. Mica--Dielectric properties 2. Mica--Impurities

Card 4/4

VOROZHTSOVA, I.G.

Dielectric losses of muscovite containing mineralogical inclusions of biotite and limonite. Izv.vys.ucheb.zav.; fiz. no.5:135-140 '58. (MIRA 12:1)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva.
(Muscovite--Electric properties)

VOROZHTSOV, B.I.; OL'SHANSKAYA, N.I.; VOROZHTSOVA, I.G.

Dielectric properties of insulation materials in gamma-irradiation. Part 5: Polyethylene terephthalate. Izv.vys.ucheb.zav.;fiz.no.2:75-77 '63. (MIRA 16:5)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.
(Terephthalic acid--Electric properties)

VOROZHTSOVA, I. G.

43537
S/196/62/000/023/004/006
E194/E155

15.8500

AUTHORS: Vodop'yanov, K.A., Vorozhtsov, B.I., Potakhova, G.I., Lavrov, M.D., Nesmelova, Ye.S., Nesterov, V.M., Vorozhtsova, I.G., Ol'shanskaya, N.I., Zimina, Ye.A., Mikhaylova, T.G., Sitozhevskaya, G.V., and Pilatov, I.S.

TITLE: The influence of betatron radiation on the dielectric properties of certain electrical insulating materials

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.23, 1962, 12-13, abstract 23 B 67. (In collection: Elektron. uskoriteli (Electronic Accelerators), Tomsk, Tomskiy un-t, 1961, 308-318)

TEXT: The temperature and frequency characteristics of electrical insulating materials were investigated before and after γ-irradiation at dosages ranging from 10^4 to 2×10^5 rads with a dosage rate ranging from 300 to 1300 rads/minute at temperatures of -60, -20 and +60 °C and under tropical conditions (40 °C and relative humidity of 98%); the source of radiation was a

Card 1/3

The influence of betatron radiation...

15 MeV betatron. The characteristics of polyethylene were not altered by a radiation dose of 10^5 rads (the measurements were made at about 10^9 c/s). The low-frequency tan δ of plastic АГ-4 (AG-4) increased (particularly after irradiation under tropical conditions and at -60 °C) but the value in the frequency range 10^5 - 10^6 c/s did not alter. Evidently irradiation increases the resistive component of loss by conductivity and does not alter the relaxation components. Similar results were obtained for plastics K-114-35, K-211-3 and ФКПМ-25 (FKPM-25). In the case of textolite with a silicoorganic bindor СКМ-1 (SKM-1), a dosage rate of 500 rads/min first increases the low-frequency tan δ only up to about 10^5 rads, and then diminishes it. Above 1200 rads/min the tan δ steadily decreases. It is possible that with heavy dosages and high dosage rates a process of binding together reduces the tan δ. In the silicoorganic resins 14Р-2 (14R-2), 14R-6 and 14R-15, dosage rates of 500 rads/min and a dosage of 10^5 rads cause a small increase in conductivity and tan δ at low frequency, but this change disappears as temperature curves are being taken, so that the shape of the reverse temperature curve coincides with that

Card 2/3

S/196/62/000/023/004/006
E194/E155

The influence of betatron radiation..

for the non-irradiated material. Irradiation of varnishes K-47, 976-1, and MIM -16 (MGM-16) under various conditions caused no change in their electrical insulating properties. Irradiation of steatite ceramic (1% BaO, 91.6% Onot talc, 5.2% kaolin, 3.2% boracite) (with a dosage of 2×10^5 rads) did not alter the shape of the temperature curve of tan δ (measured at 10^7 c/s) either in weak fields (945 V/cm) or in strong (1890 V/cm). With a dosage of 2.12×10^7 rads, tan δ measured at 945 V/cm was not altered at low temperatures but increased appreciably at temperatures above 400 °C.
13 illustrations. 31 references.

[Abstractor's note: Complete translation.]

Card 3/3

SOV/139-58-5-29/35

AUTHOR: Vorozhtsova, I. G.

TITLE: Dielectric Losses in Muscovite Mica with Mineral Inclusions of Biotite and Limonite (Dielektricheskiye poteri v slyude muskovite s mineralogicheskimi vklyucheniyami biotita i limonita)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, fizika, 1958, Nr 5, pp 135-140 (USSR)

ABSTRACT: The paper was presented at the Conference of Higher Education Establishments on Dielectrics and Semiconductors at Tomsk, February, 1958. The author studied the dielectric losses of muscovite with inclusions of biotite and limonite, as well as properties of pure muscovite. The temperature and frequency dependences of the loss angle tan δ and of permittivity ε were obtained in the temperature range from 20 to 350°C and at frequencies from 50 to 10^6 c/s before and after heating at 400, 600 and 800°C for 4 hours. The loss in weight and the changes in structure were determined after each heating in pure muscovite and in muscovite with biotite. Tan δ and ε were measured at low and audio-frequencies, using an unbalanced

Card 1/3